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AS MEDIATING VARIABLES IN FISHBEIN'S MODEL

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A B S T R A C T

Fishbein's behavioral intention model often produces weak and
inconsistent predictions in marketing applications. In this research, a
structural equation methodology is used to test hypotheses concerning the
mediating effect of social expressiveness of products on the predictive
power of the model and on the the interdependency of attitudinal and
normative variables. The findings support the hypothesis that Fishbein's
model explains more variation in buying intentions for products under a high
degree of volitional control (i.e., high socially expressive products, like
clothing) than for products under a low degree of volitional control (i.e.,
soft drinks).

Furthermore, the results demonstrate a higher degree of collinearity
between normative belief and attitude for socially expressive products.
Socially desirable response distortion is found to be a major problem in
measuring motivation to comply (MC_j) with expectations of referents.
Respondents with a strong tendency to answer in a socially desirable way
tend to bias their MC_j responses in the direction of their intended
self-presentation. This response distortion is found to be sensitive to
formulation of items, but not to the type of product. Generally, the type
of product (e.g., clothing and soft drinks) influence the degree of reported
motivation to comply with pressure of referents.

Fishbein's model has become one of the most influential and widely researched models in the marketing literature (see Miniard and Cohen, 1981; Burnkrant and Page, 1982; Ryan, 1982). Recent studies using the causal modeling methodology have given a fresh impetus to examination of reliability and validity of Fishbein's behavioral intention model (e.g., Bagozzi, 1980, 1981a, b, 1983; Bentler, 1980; Bentler and Speckart, 1981; Burnkrant and Page, 1982; Ryan, 1982). A major concern of these studies has been that traditional regression analyses have obscured reliability and validity issues and produced misleading results. The analysis of linear structural relationships by maximum likelihood methods, termed LISREL (Jöreskog and Sörbom, 1981), opens a new way of analyzing complex interdependencies of variables. Although Fishbein's model has been found to predict certain behavioral criteria, evidence to support the hypothesized interrelationships among all of its components has been very limited (e.g., Lutz, 1975, 1977, 1978; Warshaw, 1980b; Miniard and Cohen, 1981; Hom and Hulin, 1981; Burnkrant and Page, 1982; Ryan, 1982; Warshaw, Sheppard, and Hartwick, 1983).

The following sections introduce the basic theory and discuss its empirical support, outline the key hypotheses of this study, and report the findings of an investigation on the effects of social expressiveness of products and social desirability as mediating variables in Fishbein's model (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980).

THE FISHBEIN BEHAVIORAL INTENTION MODEL

The basic Fishbein paradigm is that behavioral intention (BI) is affected directly only by attitude (Aact) and subjective norm (SN). All other determinants of behavior (e.g., situational forces; personality) are presumed to work through Aact and SN enroute to BI and B. Behaviorial

intention is presumed to determine behavior under certain restrictions. Several authors have discussed the parallels of Fishbein's formulation of attitude toward act and the traditional utility models or economic models of consumer behavior (e.g., Trommsdorff, Bleicker, and Hildebrandt, 1980; Warshaw, Sheppard, and Hartwick, 1983). Aact reflects all the consequences of performing the act that come to mind, while subjective norms refer to the perceived wishes of reference people and groups.

All three central equations are in formal terms:

$$B \simeq BI = w_1 \cdot Aact + w_2 \cdot SN \qquad (1)$$

$$Aact = \sum_{i=1}^{n} B_i \cdot a_i \qquad (2)$$

$$SN = \sum_{i=1}^{k} NB_j \cdot MC_j \qquad (3)$$

where:

B   = overt behavior corresponding to the intention BI.

BI   = behavioral intention.

B_i = the individual's expectation (i.e., perceived probability) that the performance of a specific behavior will lead to an ith outcome (= b e l i e f).

a_i = the positive or negative evaluation of the ith outcome (= e v a l u a t i v e   a s p e c t   o f   b e l i e f).

n   = the number of salient outcomes.

SN   = the subjective norm (i.e., the overall perception of what relevant groups or individuals think the actor should do).

MC_j = the individual's motivation to comply with the perceiced expectations of the jth group or individual.

k   = the number of salient reference groups or individuals.

w_1, w_2 = weights calculated through linear regression that represent the relative importance of Aact and SN for explaining the variance in behavioral intention.

Research on Fishbein's theory and model has focuses on two major problem areas: limitations in the domain of applicability of the model (e.g., Trommsdorff, 1975; Warshaw, 1980b; Kroeber-Riel, 1980, p.195; Schnedlitz, 1981a; Warshaw, Sheppard, Warwick, 1982, and aspects of validity and measurement (e.g., Bagozzi, 1981a, b, 1982, 1983; Ryan and Bonfield, 1980; Burnkrant and Page, 1982; Ryan, 1982). While the past validation research will be discussed in the next section, it seems important to mention the theoretical and pragmatic limitations for application of the Fishbein model.

Fishbein and Ajzen's theory (Fishbein and Ajzen, 1975; Ajzen and Fishbein, 1980) postulates a quite restrictive framework for applictions of the model. Warshaw, Sheppard, and Warwick (1983) summarize major caveats from the perspective of an applied discipline, like marketing. First, the model is not designed to predict the performance of behaviors in situations where intention is apt to change subsequent to its measurement. Second, the Fishbein model is restricted to predict the performance of behavioral acts being completely under volitional control. Third, the Fishbein and Ajzen theory is designed for assessing an individual's intention to perform a behavior, and it does not predict the actual attainment of outcomes that are reached with behavioral acts (e.g., studying hard to achieve an MBA's degree, buying an expensive car to become socially accepted, drinking beer to forget problems).

Although later on, Fishbein's model has been applied to multiple behavioral criteria (Ajzen and Fishbein, 1980), it still does not take into account that in many behavorial settings individuals have to choose simultaneously between a number of possible alternative actions (e.g., choosing to buy a specific brand).

In addition, from a managerial point of view, the Fishbein model does not provide a solution to the problem of correspondence rules between

subjective scalings of consumers and controllable parameters from the persepctive of marketing activities (e.g., Freter, 1979; Schnedlitz, 1981b). It provides no guidance as to which are the central points for developing a successful marketing strategy.

PAST VALIDATION RESEARCH AND HYPOTHESES

In this study, only validation research concerning the general ability of the model to predict behavioral intentions and behavioral acts and concerning the importance of normative predictors will be dissussed explicitly. For a complete overview of validation research on the Fishbein model, see Warshaw (1980b), Miniard and Cohen (1981), Ryan (1982), and Burnkrant and Page (1982).

PRODUCTS SOCIAL EXPRESSIVENESS AND THE MODEL PREDICTIVE POWER

Bonfield (1974) has found that, for products perceived as important, the Fishbien model explains a higher proportion of BI's variance. A similar finding is reported by Schnedlitz (1981b). There is one logical connection of these results to Fishbein and Ajzen's theory. Ajzen and Fishbein (1980) postulate that their model is restricted to predict only the performance of behavioral acts which are under volitional control. Important buying decisions to a higher degree should be volitional acts. Kroeber-Riel (1980, p. 316) points out the relationship between personal involvement, buying situation, and type of product. Similar assumptions have been formulated by Bagozzi (1983). Purchase of consumer durables is more under volitional control than purchase of everyday products. Furthermore, the two selected product groups for this study (i.e., soft drinks and clothes) are proven to be different both in social expressiveness and personal involvement

(Schnedlitz, 1981a). Soft drinks have lower scores for social expressiveness and also for personal involvement in the buying situation. The opposite is true for clothing.

Volitional control, as this term is used in this study, refers to complete conscious control over performance of a behavior. In other words, if a person's behavioral act is determined by non-cognitive factors, such as habits or impulsive responses, that premise of volitional control is violated (Warshaw, Sheppard and Hartwick, 1982). Bagozzi (1983) hypothesizes that consumer responses for low-involvement products are expected to be either impulsively (e.g., without product experience) or habitually (e.g., with product experience). For these products, the Fishbein model should provide worse predictions of behavioral intentions and behavioral acts.

As a consequence, the first hypothesis to be tested is:

H_1: Fishbein's model will explain more variation in BI for products under a high degree of volitional control (e.g., clothing) than for products under a low degree of volitional control (e.g., soft drinks).

THE RELATIVE IMPORTANCE OF THE NORMATIVE VARIABLES

Ajzen and Fishbein (1973) hypothesize that the relative importance of attitudinal and normative variables depends on situational effects, personal traits, and the social expressiveness of behavioral acts. Compliance to normative pressure is more likely when purchase of a product is socially conspicuous (Bourne, 1963). Findings concerning the relative importance of normative variables (i.e., NB_j, SN) for predicting intentions are inconsistent (see Warshaw, 1980; Miniard and Cohen, 1981; Bagozzi, 1982; Burnkrant and Page, 1982; Ryan, 1982).

When Fishbein's model is applied to buying intentions, the influence of SN is inconsistent across studies. Sometimes the normative variables

significantly predict intentions (e.g., Mathews, Wilson, and Harvey, 1974,

for toothpaste); Warshaw, 1980a, for inexpensive gifts; Warshaw, 1980b, for

dining out; Ryan and Bonfield, 1980, for loans; Ryan, 1982, for

toothpaste). At other times, the normative variables fail to significantly

predict intentions (e.g., Glassman, 1971, for ego-conspicuous goods; Lutz,

1973, for season football tickets; Ryan, 1974, for toothpaste and

automobiles; Warshaw, 1980a, for expensive gifts; Warshaw, 1980b, for

chewing gum, magazines, and soft drinks).

Bagozzi (1981a) found that neither normative belief nor subjective norm

predicted intention to donate blood. In contrast, Ajzen and Fishbein (1980)

report the results of several studies in which normative variables are

highly correlated with behavioral intention. With only few exceptions in

most of these studies, regression analysis was applied to the data. But the

typical application has ignored the possibility of influence from attitude

to normative variables or from normative variables to attitude.

Bourne (1953) originally proposed that normative influence on product

and brand decisions is a function of products "conspicuousness". As Bearden

and Etzel, (1982, p. 184) summarize:

> "... for reference group influence to affect brand decision, the item
> must be seen or identified by others. This can be operationalized in
> terms of where an item is consumed. Publicly consumed products are seen
> by others while privately consumed products are not. That is, those
> brand decisions involving products which can be noticed and identified
> are more susceptible to reference group influence."

In this study, the degree to which buying or consumption of a product

can be seen or identified by others was defined on the degree of social

expressiveness of products. In his investigation about product involvement

and social expressiveness of products, Schnedlitz (1981a) measured products'

expressiveness on 7-point scales (e.g., "In the following question, please

express your feelings for each of the products: To which degree is buying

or consumption of product X noticed by your environment?", with 7 = "very much noticed" to 1 = "not noticed at all")*. In that study, "clothing" was rated as a high socially expressive product, and "soft drinks" were rated low for social expressiveness. The next two hypotheses address the issues noted heretofore:

H_2: For high socially expressive products (e.g., clothing), the predictive power or normative variables will be higher than for low socially expressive products (e.g., soft drinks).

H_3: For high socially expressive products (e.g., clothing), the normative variables and attitude will be more high correlated than for low socially expressive products, (e.g., soft drinks).

Bagozzi (1982) found that the expectancy-value judgements ($\Sigma B_i \cdot a_i$) influenced behavioral intention (BI) both indirectly through affect toward act (Aact) and directly. On the other hand, Lutz (1977) found support only for the indirect path from expectancy-value judgements to behavioral intention. Fishbien's theory hypothesizes only an indirect path, whereas Triandis (1977) predicts a direct causal relation in his model. As Bagozzi (1982, p. 575) states, "previous studies either have not tested for the possibility of direct and indirect links from expectancy-value judgements to intentions or have failed to use the most rigorous methodology." Bagozzi (1982) hypothesizes that the direct path from $\Sigma B_i \cdot a_i$ to BI works through stored imperatives (e.g., $\Sigma B \cdot a$) activate a personal goal or value, and the goal or value, in turn, influences one's intentions to act). Another possibility accounting for an inferred direct link between $\Sigma B_i e$ and B in Bagozzi's (1982) view is that unmeasured determinants of intentions are not captured through Aact (i.e., residual effect). In this study, a further test of the direct contribution of expectancy-value judgement to explain variation in behaviroal intention is conducted (see γ_{21} in Figure A and B).

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*The following items have been translated from German .

- 7 -

For many years, survey researchers have recognized the problem of socially desirable response distortion (see Edwards, 1953; Crowne and Marlowe, 1964; Meyer-Hentschel, 1982). Self-reports might be distorted by response sets, for example in a socially desirable direction: "That is, they (respondents) tend to overreport reactions to questions as a function of socially desirable traits, feelings, attitudes, behaviors, etc. The reason for doing so is presumably to present a positive, socially accepted self-image." (Meyer-Hentschel, 1982).

Most applications of Fishbein's model have been based on surveys, especially self-reports. Nevertheless, to the best of the author's knowledge, the problem of socially desirable response distortion has never been investigated explicitly in connection with the Fishbein model.

As Ryan and Bonfield (1980) suggest, "the correlation support for relationships among the model's cognitive variables may be biased upward due to the paper pencil procedure used to operationalize these variables." (pp. 82-3). The desire to answer questionnaire items in a consistent way might cause an artificial degree of correspondence between the model's components. Furthermore, Warshaw (1980b) speculates that the proposed operationalization of MC_j may not assess the referents' true level of influence on behavioral intention. First, a respondent may want to do what a referent expects, not because of the referent's influence, but because behavior is consistent with the respondent's own attitudes. Warshaw's second argument against the usual measurement of motivation to comply refers to the unrealistic assumption that MC_j is independent of the behavior under consideration and of the strength of the various referents' opinions. Third, socially desirable answers may be given. But this type of response

distortion does not produce responses in only one direction. For some

situations, a respondent might refrain from reporting that she/he does not

intend to comply with his/her parents' or spouse's or friends'

expectations. Those answers might imply hostility (or disagreement). On

the other hand, answers conforming to the referents' expectations might be

attributed as a lack of independent personality. Since independence in

comsumption behavior is generally considered to be a positive norm for

students, self-reports on motivation to comply should be distorted downward,

even more so for low socially expressive products.

Therefore,

H_4:   The arithmetic mean of MC_j scores will be low for socially
expressive products (e.g., soft drinks) than for high socially
expressive products (e.g., clothing).

With respect to social desirability, two further hypotheses are investi-

gated in this study:

H_5:   For respondents with a strong tendency to answer in a socially
desirable way, the arithmetic means of MC_j scores will be lower
than for respondents with a weak tendency to social desirability.

Given their orientations, student respondents with high social

desirability scores should try to present themselves as being independent

from referents' informal pressure. They might tend to disassociate their

answers to attitude ($B_i \cdot a_i$) and normative belief (NB_j). Thus,

multicollinearity between $B_i \cdot a_i$ and NB_j is expected to be lower for

the subsample with high social desirability scores.

H_6:   For respondents with a strong tendency to answer in a socially
desirable way, attitude and normative belief variables will be
less highly correlated than for the respondents with a weak
tendency to answer in a socially desirable way.

Similar to Meyer-Hentschel's approach (1982), the purpose of the present

research is to get information about the relative magnitude of the response

bias caused by social desirability response distortion. Knowledge of the

pattern and magnitude of response distortion caused by socially desirable answers would provide a means to decrease distortion and/or to correct it statistically as illustrated by Meyer-Hentschel (1982).

M E T H O D

The investigation is a further analysis of data originally and partially reported by Schnedlitz (1981b). The research was conducted in four phases. The first two phases emphasized research on product symbolism, social expressiveness of products, and consumers' involvement (Schnedlitz 1981a). One result of those studies was a self-reported classification of products in terms of more or less social expressiveness, respectively, in high or low involvement products . "Soft drinks" were found to be members of the low socially expressive product group, and "clothing" were representative of socially expressive products. In phase three and phase four, a test of Fishbein's behavioral intention model was accomplished. These results are the central points of this study.

SUBJECTS

Because of sex-differences in reported product involvement and in perceived social expressiveness (Schnedlitz, 1981a), tests of the Fishbien model were applied only to female respondents. The 61 respondents for the exploratory (i.e., phase 3 of the research project) and the 120 respondents for the final study were female students of a teachers' training college in Graz, Austria. They were 19 to 24 years old.

EXPLORATORY RESEARCH

In order to identify a set of both salient product attributes and salient brands for inclusion in the final questionnaire, a pretest of a

sample of 61 female students was done. The 15 most frequently elicited beliefs and the four most frequently elicited brands were used in the final questionnaire. In this investigation, the results of two soft drink brands (Coca-Cola and Fanta) and two types of clothing (skirts) are reported.

FINAL TEST INSTRUMENTS*

The elicited beliefs were used to construct measures for both product groups and brands. A set of measures was developed to encompass behavioral intention (BI), attitude toward act (Aact), beliefs (B_i), evaluation of beliefs (a_i), normative belief (NB_j), and motivation to comply (MC_j).

Behavioral Intentions. For every soft drink brand and for every clothing type, responses were measuresd on 7-point scales, with 7 = "very likely to buy" to 1 = "very unlikely to buy". Specifically, the following question was asked: "Imagine after this class that you will go to buy a soft drink (skirt). You can choose between brands (types). Mark for every brand (type) the probability for buying it".

Affect Toward Act. Respondents were asked to express their affect toward buying a specific brand of soft drink, and a type of skirt on 7-point semantic differential. Four bipolar adjective pairs were selected from the evaluative dimension of the semantic differential, including "wise/foolish". "good/bad", "rewarding/punishing", and "favorable/unfavorable".

Expectancies and Values. For every brand (type) respondents had to assess the probability of belief (e.g., "soft drink 1 tastes sweet", + 3 = "very likely" to - 3 = "very unlikely"; "skirt 1 makes me look athletic",

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*The following items have been translated from German.

+ 3 = "very likely" to − 3 = "very unlikely". Trommsdorff (1975) has outlined potential pitfalls of this operationalizations. Nevertheless, in this study, beliefs and the evaluative aspects of beliefs were measured in the way proposed by Fishbein and Ajzen (1975).

Normative Belief. To avoid aquescence response sets, normative belief measures were formulated in different directions:

    (a) "My friends would like me to buy ...(brand/type)...generally speaking, + 3 = 'very likely' to − 3 = 'very unlikely'."

    (b) "My friends would dissuade me from buying ...(brand/type)... − 3 = 'very likely' to + 3 = 'very unlikely'."

Motivation to Comply. To avoid aquescence response sets, the MC_j measurements were conducted analogously to the NB_j measures:

    (a) "When I buy a soft drink (a skirt), I do not listen to advice from my friends, − 3 = 'strong agreement' to + 3 = 'disagreement'."

    (b) "I try to buy soft drinks (a skirt) that my friends like too, +3 = 'strong agreement' to − 3 = 'disagreement'."

Social Desirability. Every respondent was asked to answer the German adaptation (Lück and Timaeus, 1969) of the "social desirability scale" developed by Crowne and Marlowe (1960). This questionnaire consists of 10 items, and its reliability and validity have been tested by Lück and Timeus (1969). The median of scores was used to split the sample into a "high social desirability subsample" and in a "low social desirability subsample".

METHOD OF ANALYSIS

All path coefficients shown in Figure A and B were estimated with LISREL V (Jöreskog and Sörbom, 1981). This method of analysis has proven to be very flexible and powerful (see Bentler, 1980; Bentler and Speckart, 1981; Bagozzi, 1981a,b, 1982a,b, 1983; Burnkrant and Page, 1982; Ryan, 1982).

LISREL has been designed especially for handling latent variables. Many different types of analysis can be accomplished, such as the incorporation of multiple indicators of unobserved variables, explicit modeling error, variance partitioning, modeling of reciprocal causation, representation of second order factors, simultaneous group analysis, tests of construct validities, and many more options. In this investigation, LISREL V makes it possible to estimate all path coefficients simultaneously, including the crossover paths. Typically, crossover paths (see γ_{21} in figure A and B) have been ignored in the regression approach (Ryan. 1982). Correlation, rather than covariance matrices, were analyzed because the matter of interest was the relative strength of the paths, not the obsolute predicted value of BI. Since single-item measures (BI) and summarized scores ($\Sigma B_i \cdot a_i$, $\Sigma A act$, ΣNB_j, $\Sigma NB_j \cdot MC_j$) were computed in order to test Fishbein's behavioral intention model for buying intentions, the measurement errors had to be constrained to be equal to zero.

Furthermore, a t-test method was used to compare arithmetic means and correlation coefficients, using Fisher's z-transformation for correlation coefficients (see Guilford, 1965).

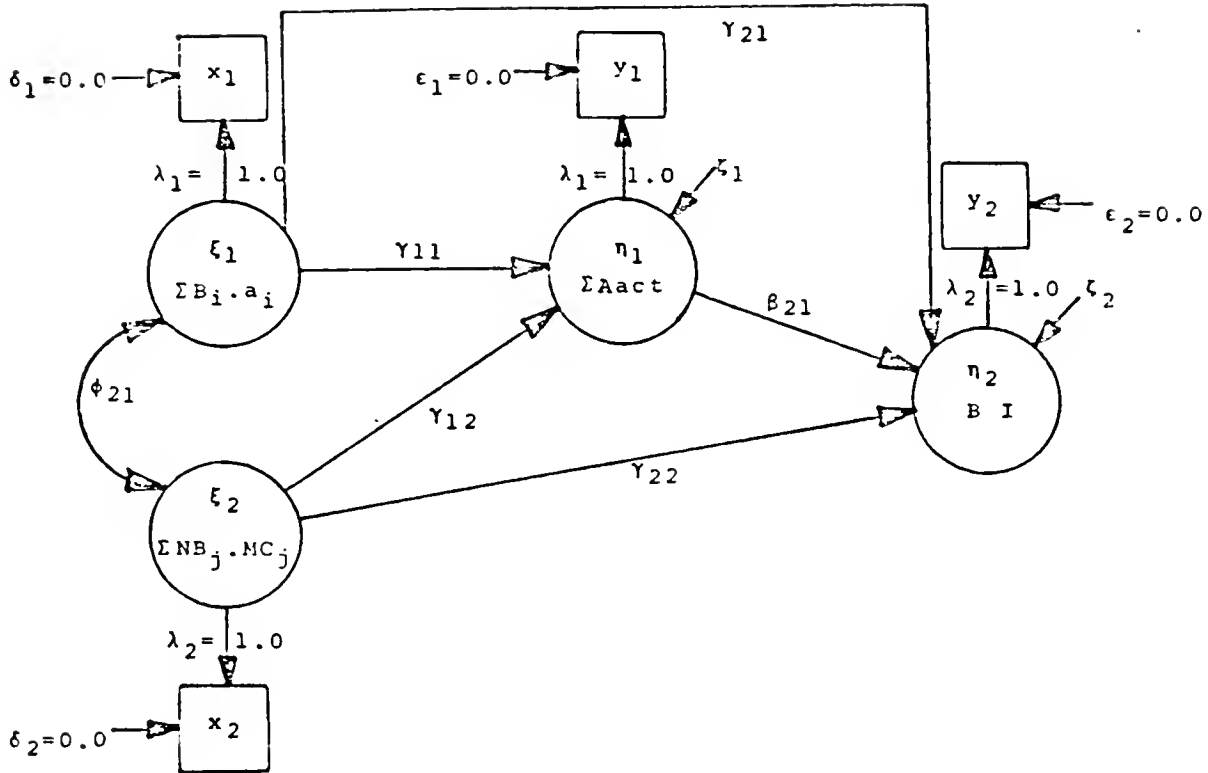PROPOSED INTENTION FORMATION MODEL 1
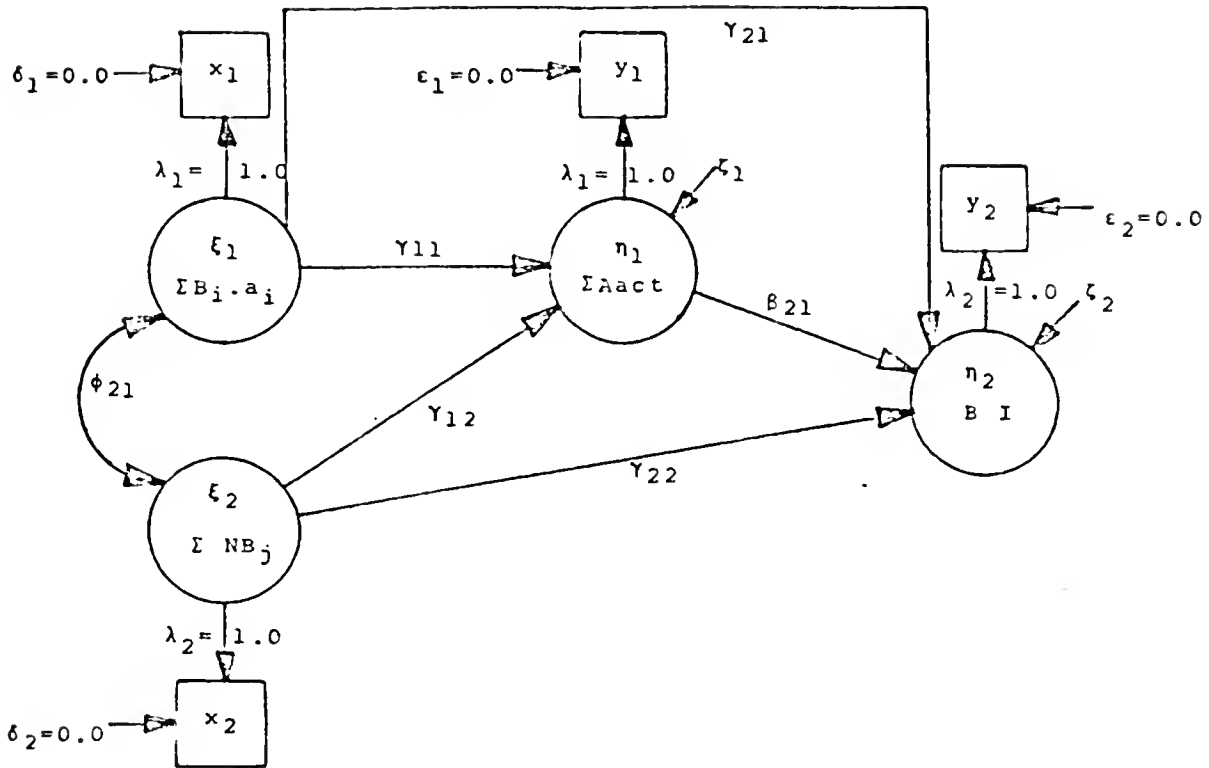
where:

x_i =   independent observed variable

y_i =   dependent observed variable

δ_i =   error term for x_i

ϵ_i =   error term for Y_i

ξ_i =   independent unobserved variable

η_i =   dependent unobserved variable

ζ_i =   error term for η_i

λ_i =   coefficient of an observed independent (x_i) or dependent (y_i) variable in a measurement equation.

β_i =   path coefficient of an unobserved dependent varaible (η_i)

γ_i =   path coefficient from an unobserved independent variable (ξ_i) to an unobserved dependent variable (η_i).

               (γ_{12} = crossover effect).

ϕ_i =   correlation between the two ξ_i's.

FIGURE B
PROPOSED INTENTION FORMATION MODEL 2

$\delta_1 = 0.0 \rightarrow x_1$

$\epsilon_1 = 0.0 \rightarrow y_1$

γ_{21}

$\epsilon_2 = 0.0$

$\lambda_1 = 1.0$

$\lambda_1 = 1.0$

ζ_1

y_2

ξ_1
$\Sigma B_i \cdot a_i$

γ_{11}

η_1
$\Sigma Aact$

β_{21}

$\lambda_2 = 1.0$ ζ_2

ϕ_{21}

γ_{12}

η_2
$B \; I$

ξ_2
$\Sigma NB_j \cdot MC_j$

γ_{22}

$\lambda_2 = 1.0$

$\delta_2 = 0.0 \rightarrow x_2$

where:

x_i = independent observed variable

y_i = dependent observed variable

δ_i = error term for x_i

ϵ_i = error term for y_i

ξ_i = independent unobserved variable

η_i = dependent unobserved variable.

ζ_i = error term for η_i

λ_i = coefficient of an observed indepdent (x_i) or dependent (y_i) variable in a measurement equation.

β_i = path coefficient of an unobserved dependent variable (η_i).

γ_i = path coefficient from an unobserved independent variable (ξ_i) to an unobserved dependent variable (η_i).

(γ_{12} = crossover effect)

ϕ_i = correlation between the two ξ_i's.

- 15 -

T A B L E 1
PARAMETER ESTIMATES FOR THE MODEL IN FIGURE A
$$(BI = w_1 \cdot \Sigma Aact + w_2 \cdot \Sigma NB_j)$$

Parameter estimates (standard errors)

PARAMETER	SOFT DRINK 1	SOFT DRINK 2	SKIRT 1	SKIRT 2
β_{21}	.478 (.085)	.450 (.080)	.506 (.083)	.476 (.083)
γ_{11}	.394 (.078)	.244 (.088)	.517 (.078)	.363 (.080)
γ_{12}	.307 (.078)	.273 (.088)	.196 (.078)	.375 (.080)
γ_{21}	.205 (.080)	.138 (.080)*	.235 (0.82)	.271 (.078)
γ_{22}	.067 (.077)*	.186 (.080)	.067 (.072)*	.081 (.079)*
ϕ_{21}	.208 (.086)	.346 (.076)	.382 (.073)	.460 (.066)
ψ_{11}	.700 (.091)	.820 (.106)	.617 (.080)	.603 (.078)
ψ_{21}	.604 (.078)	.624 (.081)	.505 (.065)	.493 (.064)

*path coefficient is not significant at .05 level.

TABLE 2
PARAMETER ESTIMATES FOR THE MODEL IN FIGURE B
$$(BI = w_1 \cdot \Sigma Aact + w_2 \cdot \Sigma NB_j \cdot MC_j)$$

Parameter estimates (standard errors)

Parameter	Soft Drink 1	Soft Drink 2	Skirt 1	Skirt 2
β_1	.500 (.081)	.487 (.079)	.531 (.081)	.509 (.077)
γ_{11}	.456 (.081)	.310 (.086)	.609 (.075)	.363 (.077)
γ_{12}	−.112 (0.81)*	−.164 (.086)*	−.092 (.075)*	.051 (.077)*
γ_{21}	.208 (.080)	.177 (.079)	.236 (.083)	.290 (.077)
γ_{22}	−.022 (.072)*	−.079 (.076)*	.055 (.067)*	.009 (.065)*
ϕ_{21}	−.018 (.092)*	−.169 (.088)*	.181 (.087)	.071 (.091)*
ψ_{11}	.778 (.101)	.859 (.111)	.641 (.083)	.711 (.092)
ψ_{22}	.608 (.078)	.646 (.084)	.505 (.066)	.497 (.064)

*path coefficient is not significant at .05 level.

ψ_{11} (for Aact) and ψ_{22} (for BI) indicate the portion of unexplained variance for the two dependent variables (see Tables 1 and 2). These results refer to the first hypothesis investigated in this study. Table 3 shows the percentage of variance (i.e., $1 - \psi_{22}$) of BI explained through model 1 and model 2. There is obviously a tendency in the direction formulated in hypothesis one. For both models the critical ratio is higher for clothing than for soft drinks. So, relatively speaking, the Fishbein model predicts buying intentions for products that are under higher volitional control more accurately than for those under lower volitional controls, as hypothesized.

TABLE 3
EXPLAINED VARIANCE IN BEHAVIORAL INTENTIONS AND CRITICAL RATIOS

	Parameter estimates (standard errors)			
	Soft Drink 1	Soft Drink 2	Skirt 1	Skirt 2
Model 1	.396	.376	.495	.507
Critical ratio	5.08	4.64	.761	7.92
Model 2	.392	.354	.495	.503
Critical ratio	4.96	4.21	7.50	7.86

The results summarized in Table 1 and 2 show several deviations from the model's premisis postulated by Fishbein and Ajzen (1975). First, with one exception (γ_{22} for soft drink 1 in Table 1), normative variables do not contribute significant explanation of BI's variance. This is true for both the ΣNB_j operationalization and the $\Sigma NB_j \cdot MC_j$ operationalization. There is even a tendency to produce negative path coefficients

from $\Sigma NB_j \cdot MC_j$ to BI (see γ_{22} in Table 2). This seems to be a good example for the new type of information LISREL provides. Looking at the simple correlation coefficients between ΣNB_j and BI, all coefficients are found to be significant at least at the .05 level (i.e., soft drink 1: r = .296; soft drink 2: r = .395; skirt 1: r = .356; and skirt 2: r = .464.; r_{crit} = .18; df = 118). But because of high multicollinearity between the components of the Fishbein model, these correlations turn out to be non-significant for the whole model. Naïve interpretations of simple correlation coefficients would lead to incorrect conclusions. On the basis of the results presented in Table 1 and 2, the second hypothesis investigated has be to rejected. The predictive power of normative variables is not stronger for socially expressive products (i.e., for clothing).

On the other hand, in seven of eight cases, a direct path from attitude ($\Sigma B_i \cdot a_i$) to behavioral intention (BI) is significant (see γ_{21} in Tables 1 and 2). This result is in contrast to postulated relationships between the components of Fishbein's model. In Ajzen and Fishbein's formulations (e.g., 1980), BI should be determined directly only by Aact and SN. But these results converge with the findings of Bagozzi (1982) and diverge from the findings of Lutz (1977).

The third hypothesis touches on the problem of collinearity between the attitudinal and the normative variables (e.g.,; ϕ_{21} in Tables 1 and 2). For model 1, correlation coefficients between $\Sigma B_i \cdot a$ and ΣNB_j are significant for all cases. The critical ratios of weights and standard errors are, for soft drink 1: 2.42; for soft drink 2: 4.55; for skirt 1: 5.23; and for skirt 2: 6.97. These ratios suggest that we accept hypothesis three. For high socially expressive products, collinearity between normative beliefs (ΣNB_j) and attitude ($\Sigma B_i \cdot a_i$) is stronger. We should note that our

critical ratios might be slightly overestimated since we used the correlation matrix as input.

RESULTS CONCERNING SOCIALLY DESIRABLE RESPONSE DISTORTION

Table 4 shows that, for both MC_j items, means are lower for soft drinks than for clothing. So the fourth hypothesis tested in this study cannot be rejected, as proposed. Motivation to comply scores are significantly lower for low socially expressive products (i.e., for soft drinks). These results suggest that the degree of motivation to comply with expectations of referents' is not independent of the product's type. For socially conspicuous products, respondents tend to comply with a higher probability than for non-socially conspicuous products.

The results in Table 5 force us to reject the fifth hypothesis in general. The differences between the mean scores of the low social desirability subsample and of the high social desirability subsample are significant only for the first MC_j item. For the second MC_j item, a tendency in the direction of hypothesis five is evident. The more positive formulation of MC_2 is not influenced by socially desirable response distortion as the item MC_1 is. These results prove the sensitivity of formulations in Fishbeins model for response sets.

The results concerning hypotethis six are mixed (see Table 6). Redundancy (i.e., correlations between attitude ($\Sigma B_i \cdot a_i$) and normative belief (ΣNB_j), is stronger for the high social desirability subsample only in two of the four cases, although the tendency is uniform. Thus, hypothesis six must be rejected.

TABLE 4
MEANS OF MOTIVATION TO COMPLY MEASURES FOR SOFT DRINKS AND CLOTHING

	Soft Drinks	Clothing	t*	df	p
MC Item 1	-1.883	.417	-10.80	119	.000
MC Item 2	-1.367	.292	- 7.22	119	.000

*One-tailed t-test for repeated measures.

TABLE 5
MEANS OF MOTIVATION TO COMPLY MEASURES FOR LOW AND HIGH SOCIAL DISIRABILITY (SD) SUBSAMPLES

SOFT DRINKS					
	Low SD	High SD	t*	df	p
MC Item 1	-1.650	-2.117	1.55	118	.062
MC Item 2	-1.250	-1.483	0.62	118	.268

SKIRTS					
	Low SD	High SD	t*	df	p
MC Item 1	0.767	0.067	1.78	118	.039
MC Item 2	0.467	0.117	0.90	118	.186

*One-tailed test for independent measures.

TABLE 6

CORRELATION COEFFICIENTS BETWEEN COGNITIVE ATTITUDE AND NORMATIVE BELIEF

	Low SD	High SD	z^*	p
Soft Drink 1	.247	.169	0.48	.316
Soft Drink 2	.495	.193	1.93	.027
Skirt 1	.602	.155	2.80	.003
Skirt 2	.482	.455	0.21	.417

*One-tailed z-test with Fisher's z-transformation.

DISCUSSION AND CONCLUSION

The results of this study in part converge with and in part diverge from findings of other researchers who have investigated Fishbein's behavioral intention model. The central focus of this research is to test the mediating effects of products' special expressiveness and of socially desirable response distortion. As postulated in theory (e.g., Fishbein and Ajzen, 1975, Ajzen and Fishbein, 1980), the results confirm the recursive sequence of effects from expectancy-value judgements, to attitude toward act, and finally to behavioral intention. But another finding is that $\Sigma B_i \cdot a_i$ influenced BI not only indirectly through Aact, but also directly. On the basis of Fishbein's theory, only the indirect sequence is to be expected. These results confirm the findings of Bagozzi (1982) who suggested three explanations for the direct casual path of expectancy-value judgements on behavioral intentions.

"One possibility is that the expectancy-value judgements trigger previously learned action tendencies or rule-following behaviors to which intentions are connected. In this sense, they are similar to Triandis' habit variable but, unlike habit, they are taken here to comprise cognitive and awareness processes. Habit could still function as a separate noncognitive determinant below the level of awareness along with expectancy-value effects on intentions. A second possibility is that expectancy-value judgements influence other unmeasured cognitive

or affective processes and these, in turn, influence intentions. A direct an an indirect path to intentions are consistent with the possibilty that key processes have been omitted. A final possibility is that the direct link reflects novelty- or variation-seeking tendencies which provide for the functional initiation of purposeful action." (Bagozzi, 1982, p. 581).

Furthermore, in contrast to the model's premises, normative variables do not contribute significant explanation of variance in buying intention. This result was obtained for both the $\Sigma NB_j \cdot MC_j$ and the ΣNB_j operationalization. As mentioned above, there is a great diversity of research showing the predictive power of normative variables for buying behavior (Warshaw, 1980b; Schnedlitz, 1981b; Ryan 1982). In this research, the major cause for nonsignificant path coefficients from ΣNB_j to BI is mainly the strong multicollinearity between the model's components. But in this study only one source of multicollinearity was investigated (i.e., correlation between $\Sigma B_i \cdot a_i$, ΣNB_j and the dependent variables Aact and BI). Furthermore, without experimental control no conclusions about causal relationships between the variables can be drawn. For example, normative belief might be the cause and attitude might be the effect of this association, or vice versa.

Multicollinearity among predictors in Fishbein's model could be caused by a great bunch of possible relationships (e.g., $\Sigma NB_j \rightarrow B_i \cdot a_i$, or $\Sigma NB_j \rightarrow B_i$, or $\Sigma NB_j \rightarrow \Sigma a_i$, or $\Sigma B_i \cdot a_i \rightarrow \Sigma NB_j$, or $\Sigma a_i \rightarrow \Sigma NB_j$, etc.). Future research has to be conducted to provide more information about the diversity of causes for multicollinearity between the variables in Fishbein's model. In spite of significant correlation coefficients between ΣNB_j and BI in this study, crossover effects make the contribution of normative variables nonsignificant. It also will be discussed later that the multiplicative operationalization of the normative component (i.e., $\Sigma NB_j \cdot MC_j$) was influenced by socially desirable response distortion.

In their critique of Miniard and Cohen's (1981) study, Fishbein and Ajzen (1981) admit some discrepancies concerning the problem of identifying the best level of which to measure motivation to comply.

> "Theoretically, we have assumed that notivation to comply should be treated in a bipolar fashion, but in retrospect we see little basis for arguing that, in general (i.e., with respect to all behaviors in all situations), a person would "want to do the opposite" of what even a despised referent might precribe. In contrast, when it comes to complying with a referent's specific behavioral prescription, or complying with a referent in a given behavioral domain, it might be reasonable for a person to "want to do the opposite" of what the referent may prescribe. Recall, however, that measuring motivation to comply at the behavior-specific level provides little more than an indirect assessment of the person's behavioral intention. .In conclusion, a behavior-specific measure of motivation to comply (scored in bipolar fashion) may lead to the best prediction of intentions, but we reject its use since it adds little to our understanding of the determinants of these intentions." (Fishbein and Ajzen, 1981, 347).

But in that comprehensive discussion, the problem of response sets has never been touched on.

Second, there is some evidence that the degree of explained variation in BI is higher for socially expressive products (e.g., clothing) than for low socially expressive products (e.g., soft drinks). About 50% in BI's variance was explained by Fishbein's model for clothing, and about 35 to 40% for soft drinks. This is approximately the same proportion of shared variance Ryan (1982) reports for intentions to buy toothpaste. However, it should be noted here that χ^2-tests indicate that Ryan's overall model must be rejected. Of course, under the impression of divergent results of past research (see Bagozzi, 1982), the acceptance of the first hypothesis tested in this study must be tentative. Moreover, this problem area seems to be very important from a managerial point of view, as well. If Fishbein's model is able to predict only buying behavior intentions and behavioral acts that are under total volitional control, it might produce artificial and misleading results for some applied settings in market

research. For example, it should provide better predictions for industrial buying behavior than for consumers' buying behavior. As Bagozzi (1983) and Kroeber-Riel (1980) argue, many buying decisions can be classified as affective, impulsive, or habitual. Consumers' information and decision processing do not follow ideal volitional models in many cases. Complex model and conjuctions of scales might erroneously show accuracy (Schnedlitz, 1982). It would be an interesting question for future research to investigate for what categories of consumer behavior application of Ajzen and Fishbein's theory is useful, and for what categories it is not. An interesting approach is reported by Holbrook (1981). He uses conjoint analysis in conjunction with path analysis to investigate the mediating effects of beliefs on the interdependency of attitudinal and mornative variables. As Ryan (1982) states, the combination of structural methods that incorporate measurement error methodology with techniques, like conjoint analysis, might become a fruitful step in the future.

Third, the rejection of the second hypothesis demonstrates one advantage of LISREL compared with the traditional regression approach. Normative variables do not contribute signicant explanation of variation in BI. Relatively speaking, higher correlation coefficients between ΣNB_j and BI for clothing were compensated by strong multicollinearity between the model's components. From these results it is to be expected that using LISREL as a method of analysis would change the perspective of interpretation for many of past validation studies that applied regression analysis or simple correlation analysis. The usual regression approach ignores the problem of simultaneous crossover paths. On the other hand, research on reference group's influence on buying behavior shows remarkable relationships between perceived group pressure and buying decisions (e.g.,

Bearden and Etzel, 1982). However, in that type of research, complex relationships and interdependencies among attitudinal and normative variables are not taken into account.

Fourth, as expected, collinearity between expentancy-value judgements and normative belief is mediated by product type. For clothing (i.e., socially expressive products), correlation coefficients between ΣNB_j and $\Sigma B_i \cdot a_i$ are even stronger than for soft drinks. The acceptance of this hypothesis is an indrect confirmation of the second hypothesis investigated in this study. Respondents tend to associate their answers expecially for expressive products, like clothing. More systematic research on mediating effects of product type on the interdependency of Fishbein's model's components is needed.

Finally, influence of socially desirable response distortion is shown to be an important problem for the use of the Fishbein model to predict buying intentions. Respondents with a high social desirability score try to confirm their intended self-presentation. The results of this study suggest that response distortion also covaries with product type and the formulation of questions. Generally speaking, motivation to comply with referents' expectations is not as strong for low expressive products (e.g., soft drinks) as for high expressive products (e.g., clothing). These results reflect variation of intensity in social control for buying intentions. Motivation to comply does not only depend on the category of behavior (e.g., buying behavior, donation of blood, or voting for a candidate). It also differs from product to product. Socially desirable response distortion seems to be very sensitive to questionnaire formulation in Fishbein's model, as well. As it has been formulated in hypothesis five, respondents with a strong tendency to social desirability report a lower degree of motivation

to comply as that answer matches with their self-presentation. These results must be regarded tentative and have to be judged in the light of the fact that the sample was formed by female students. But the more obvious and uniform favorability of an answer, the more response distortion must be expected. In this study, the two MC_j items differ in the degrees of perceived favorability of answers.

Although the pattern of results is relatively consistent, significant differences between the mean scores for the high and low social desirability subsample were found only for item 1.

The results concerning the mediating effects of social desirability on collinearity between $\sum NB_j$ and $\sum B_i \cdot a_i$ were mixed. Differences between the correlation coefficients are significant for soft drink 2 and skirt 1 (see Table 6), but not for soft drink 1 and skirt 2. The basic assumptions of hypothesis six seem to be too simple to capture the problem's complexity. Obviously, collinearity between expentancy-value judgements and normative belief was not influenced by the products' type. Nevertheless, it was influenced by the evaluation of the brand in question. Further research on consumers' perception of reference group expectations concerning product and brand decisions needs to be conducted. For example, Bearden and Etzel's (1982) results support hypothesized differences in reference group influence between publicly and privately consumed products and luxuries and necessities.

From a managerial point of view, multicollinearity remains an unresolved weakness of Fishbein's behavioral intention model (Warshaw, 1980). High correlations between predictive variables cause biased path coefficients. This can become a serious problem when marketing strategy and managerial decisions are based on the magnitutde of proper coefficients. This

argument, as well as the restrictive framework for application discussed above, ought to be kept in mind. Such limitations may preclude the use of the model on some applied settings of consumers behavior research and marketing research.

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